STATE OF HAWAII
DEPARTMENT OF HEALTH

MOBILE INTENSIVE CARE TECHNICIAN

ADULT AND PEDIATRIC

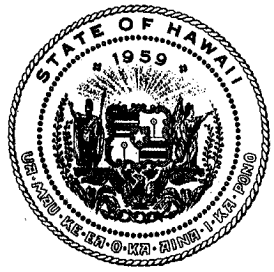
STANDING ORDERS

AND

EXTENDED STANDING ORDERS

April, 2004

DONALD C. FANCHER, M.D.
STATE EMS MEDICAL DIRECTOR
STATE EMERGENCY MEDICAL SERVICES SYSTEM



STATE OF HAWAII
Department of Health
Emergency Medical Services & Injury Prevention System

Standing Orders Policy For Mobile Intensive Care Technicians

Adult & Pediatric Patients

APPROVED:

Donald C. Fancher, M.D.
State EMS Medical Director

Date: April 1, 2004

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Medication List

Activated Charcoal 25Gm
Adenosine (Adenocard) 6mg/2cc
Albuterol Inhaler 0.9mg metered dose
Albuterol Sulfate 2.5mg/3cc
Amiodarone (Cordarone) 150mg/3cc
Aspirin, Chewable, 81mg
Ativan (Lorazepam)
Atropine 1mg/10cc
Atrovent (Ipratorpium Bromide) 0.5mg/2.5cc
Diphenhydramine (Benadryl) 50mg/1cc
Calcium Chloride 1Gm/10cc
Compazine 10mg/5cc
Dextrose 50% 25Gm/50cc
Dopamine 200mg/5cc
Epinephrine 1:1,000 1mg/1cc
Epinephrine 1:10,000 1mg/10cc
Glucagon 1mg
Ipecac Syrup 15cc
Lasix (Furosemide) 20mg/2cc
Levophed 2mg/4cc
Lidocaine 1% 100mg/10cc
Lidocaine 20% 1Gm/5cc
Morphine Sulfate 10mg/10cc
Magnesium Sulfate 1Gm/2cc
Naloxone (Narcan) 0.4mg
Nitroglycerine 0.4mg
Phenergan (Promethazine) 25mg/2cc
Pitocin (Oxytocin) 10U/1cc
Sodium Bicarbonate 50mEq/50cc
Succinylcholine 100mg/20cc
Terbutaline (Brethine) 1mg/1cc
Tylenol Elixir 20oz.
Valium 10mg/10cc
Versed 5mg/5cc

<u>If available</u>:
Atropine Auto-Injector 2mg
Sodium Thiosulfate 12.5Gm
Valium Auto-Injector 10mg
2-PAM Chloride Auto-Injector 600mg

Revised 4/2004

MOBILE INTENSIVE CARE TECHNICIAN
ADULT AND PEDIATRIC STANDING ORDERS
AND EXTENDING STANDING ORDERS

GENERAL GUIDELINES

These Standing Orders shall allow MICTs to perform the immediately-required procedures and treatments prior to communication with the Base Station Physician. The MICT has the option of following Standing Orders, but is not required to do so, before communicating with the Base Station Physician. However, in situations when the MICT is unable to communicate and the transport time is greater than ten (10) minutes the Extended Standing Orders may be use to treat the patient.

For each patient that requires the use of these standing orders, an adequate history and physical examination must be done which shall include medications, history of allergies to medications, and past medical history. MICTs may, at their discretion, because of how ill a patient appears or because of mechanisms of injury, administer O_2 , apply continuous cardiac monitoring, and establish prophylactic IV access with Saline lock or IV solution at TKO rate even if the circumstances are not covered in the following specific standing orders.

EMTs can initiate intravenous lines and perform manual external defibrillation under the direction and personal supervision of an MICT if the EMT has completed a State-approved IV/Defibrillation course of training.

Revised 4/2004

STANDING ORDERS – ADULT / PEDIATRIC

TRANSFER STANDING ORDER (TSO)

A certified MICT may accept an order to transfer a patient from one medical facility to another if each of the following conditions are met:

1. The order comes from a Hawaii licensed physician, who is treating the patient.

2. The MICT is adequately informed of the patient's diagnosis, condition, medications, allergies, expected course during ambulance transfer, specific Living Will/CCO/DNR status, and any other specific information requested by the MICT for safer transfer.

3. The MICT may use regular Standing Orders during transfer, if necessary and appropriate, and shall communicate with the receiving hospital if he/she does so.

CRITICAL TRAUMA STANDING ORDER (CTSO)

In penetrating injuries to the chest or abdomen and blunt trauma with hypotension the primary treatment is immediate hospital surgical intervention. EMS must expedite transport of these patients to hospitals and trauma centers.

If the scene is within a ten (10) minute transport time to a hospital ED with the above mentioned critical trauma patient(s), the MICT shall:

1. Rapidly extricate and immobilize the patient. Initiate transport.

2. Secure and maintain a clear airway, administer O_2 10-15 liters/min. If patient airway and effort is unstable consider IMPENDING RESPIRATORY ARREST/AIRWAY PROBLEMS Standing Orders I-F, without delay during transport.

3. Open early MEDICOM communications with the receiving hospital ED.

Addendum 4/2004

I-A CARDIOPULMONARY ARREST
(Absence of Pulse or Blood Pressure)

Initiate CPR and administer 100% by O_2 by assisted mask ventilation as soon as possible. Maintain CPR and assisted ventilation throughout incident until the return of normal spontaneous pulse and/or respiration

Check cardiac monitor rhythm by attaching electrodes or by performing a "Quick Look" using defibrillation paddles.

FOLLOW APPROPRIATE STANDING ORDER

* In the event of a cardiopulmonary arrest where an IV or IO access cannot be obtained and the patient has a pre-existing vascular access device the MICT may utilize the PVAD if he/she has received EMS provider training on accessing the device.

I-1 PULSELESS VENTRICULAR TACHYCARDIA / FIBRILLATION

Defibrillate at 200* joules and check pulse and cardiac monitor. If still in above rhythm:

Defibrillate at 300* joules and check pulse and cardiac monitor. If still in above rhythm:

Defibrillate at 360* joules and check pulse and cardiac monitor. If still in above rhythm:

- Continue CPR
- Establish IV Normal Saline at TKO rate
- Endotracheal Intubation

Epinephrine 1:10,000 1mg IV push or 2mg via endotracheal tube. Repeat every 3-5 minutes

Defibrillate at 360* joules and check pulse and cardiac monitor

Amiodarone 300mg IV push followed with 10cc Normal Saline flush

Defibrillate at 360* joules and check pulse and cardiac monitor

- If conversion occurs following Amiodarone & defibrillation, begin an Amiodarone drip with 150mg mixed into 100cc of Normal Saline and run over a 10 minute period (15mg/min)

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDRERS

* If your EKG monitor/defibrillator utilizes Biphasic technology, follow the manufacturer's recommendation when selecting joules setting.

Reviewed 4/2004

I-1-a CONTINUING PULSELESS VENTRICULAR TACHYCARDIA / VENTRICULAR FIBRILLATION

Lidocaine 1.5mg/kg IV push

Defibrillate at 360* joules and check pulse and cardiac monitor. If in same rhythm:

- If conversion occurs following Lidocaine & defibrillation, begin a Lidocaine drip by administering 1-2mg/min

Defibrillate at 360* joules and check pulse and cardiac monitor. If in same rhythm:

Defibrillate at 360* joules and check pulse and cardiac monitor

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

* If your EKG monitor/defibrillator utilizes Biphasic technology, follow the manufacturer's recommendation when selecting joules setting.

Reviewed 4/2004

I-2 ASYSTOLE

Establish IV Normal Saline at TKO rate

Epinephrine 1:10,000 1mg IV push or 2mg via endotracheal tube. Repeat every 3-5 minutes

Endotracheal intubation (unless previously able to do simultaneously with above)

Atropine 1mg IV push or 2mg via endotracheal tube. Repeat every 3-5 minutes to a maximum dose of 0.04mg/kg

COMMUNUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS
* Consider requesting the use of Sodium Bicarbonate 1mEq/kg IV push

Discontinue cardiopulmonary resuscitation if no return of spontaneous pulse and respirations after twenty (20) minutes

- Notify Police and appropriate county agencies of unattended death

Reviewed 4/2004

I-3 PULSELESS ELECTRICAL ACTIVITY

Establish IV Normal Saline with rapid infusion 300cc (if no evidence of CHF)

Epinephrine 1:10,000 1mg IV push or 2mg via endotracheal tube. Repeat every 3-5 minutes

Atropine 1mg IV push or 2mg via endotracheal tube if Bradycardia <60 bpm. Repeat every 3-5 minutes to maximum of 0.04mg/kg

Endotracheal tube (unless previously able to do simultaneously with the above)

Reassess tube placement for equal breath sounds in both lungs and position of trachea to determine tension pneumothorax

COMMUNUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS
* Consider requesting the use of Sodium Bicarbonate 1mEq/kg IV push

Reviewed 4/2004

I-4 RENAL DIALYSIS CARDIAC ARREST

Because a renal dialysis patient in cardiac arrest (of any type) can have profound hyperkalemia, administer these medications as soon as the IV is established per other applicable Standing Orders:

Calcium Chloride 2 Gm IV push

Flush IV line thoroughly*

Sodium Bicarbonate 100 mEq IV push

CONTINUE STANDING ORDERS

*** Note:** Calcium Chloride can precipitate in the presence of Sodium Bicarbonate

Reviewed 4/2004

I-5 DROWNING CARDIOPULMONARY ARREST

Follow Standing Orders of Cardiopulmonary Arrest

Administer second Epinephrine 1:10,000 1mg IV push or 2mg via endotracheal tube every 3-5 minutes. If still pulseless:

Administer Sodium Bicarbonate 1mEq/kg IV push

CONTINUE STANDING ORDERS

Caution: Be aware of possible Hypothermia. Cover the patient with blankets and turn off the air conditioner in the ambulance patient compartment.

Reviewed 4/2004

I-B STABLE VENTRICULAR TACHYCARDIA OR PVC WITH ACUTE MYOCARDIAL ISCHEMIA

Lidocaine may **NOT** be given in 2nd or 3rd degree heart block without the MEDICOM PHYSICIAN'S order.

Administer O_2 at 10-15 liters by mask

Establish IV with Normal Saline at TKO rate

Administer Lidocaine 1.0 – 1.5mg/kg IV bolus over 2-3 minutes

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FUTHER ORDERS

Reviewed 4/2004

I-C CONTINUING STABLE VENTRICULAR TACHYCARDIA OR PVC WITH ACUTE MYOCARDIAL ISCHEMIA

If Lidocaine 1.0 – 1.5mg/kg bolus does not suppress PVCs then:

Repeat Lidocaine 0.5-0.75 mg/kg every 5 – 10 minutes to a maximum of 3mg/kg

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-D CHEST PAIN

With signs or symptoms indicative of myocardial ischemia:

Administer O_2 at 2-4 liters/minute by nasal cannula or 10-15 liters by non-rebreather mask

If BP ≥ 100 systolic AND if serious suspicion of cardiac origin administer Nitroglycerine 0.4mg(1/150 grain) oral spray or tablet. (If BP is less than 100 systolic do not give Nitroglycerine unless MEDICOM physician orders it.) May repeat every 5 minutes if BP is ≥ 100 systolic

Administer Aspirin 160mg orally (provided there are no contraindications)

Establish IV with Normal Saline at TKO rate

If systolic BP > 100, may give Morphine Sulfate 2mg IV

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

• May repeat Morphine Sulfate 2mg at 3-5 minute intervals up to a total of 10mg or until pain is relieved, which ever comes first

Revised 4/2004

I-E BRADYCARDIA

Sinus Bradycardia, Junctional Rhythm, Idioventricular Rhythm, Atrial Fibrillation with Slow Ventricular Response, Mobitz I, Mobitz II, Complete Heart Block, all with ventricular rate less than 60 beats per minute, with the patient having systolic/palp BP <90 and one or more of these symptoms /signs: chest pain, shortness of breath with or without shocky skin signs (cool, pale, and diaphoretic).

Administer O_2 at 10-15 liters by non-rebreather mask

Apply pacemaker pads. (If the patient is unstable or IV access cannot be achieved or is delayed, then turn on external pacemaker and assure capture.)

Establish IV Normal Saline 1,000cc with large bore catheter.

If systolic BP is still <90 and the patient is still symptomatic:

- Give 300cc bolus Normal Saline IV (if not in CHF)
- Simultaneously give Atropine 0.5 mg IV (may repeat Atropine 0.5 mg every 3-5 minutes to total dose of 0.04 mg/kg).

If systolic BP is still <90 and the patient is still symptomatic after the second dose of Atropine, begin Dopamine drip 5-20mcg/kg per minute via automatic IV infusion pump titrated to systolic/palp BP 100.

NOTE: Communicate with the BSP as soon as possible for sedation if the patient is uncomfortable with the pacing.

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-F IMPENDING RESPIRATORY ARREST/AIRWAY PROBLEMS

Where pulse exists:

Provide rescue breathing, assisted mask ventilations with 100% O_2 until ready to perform endotracheal intubation

Perform endotracheal or nasotracheal intubation. If unable, continue assisted mask ventilation with 100% O_2 (consider Paralytic-Assisted Tracheal Intubation, Standing Orders I-O)

Establish IV with Normal Saline at TKO rate

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

AIRWAY PROBLEMS

Cricothyrotomy should be performed for:
1. Inability to ventilate a patient with tracheal obstruction after appropriate number of Heimlich maneuvers and unsuccessful assisted ventilation; or
2. Massive facial trauma.

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

I-G HYPOVOLEMIC SHOCK

For systolic BP $\leq$ 90mm Hg which is considered to be secondary to hypovolemia:

Administer O_2 at 10-15 liters/minute by mask. If apneic, or if respiratory arrest is impending, perform endotracheal intubation and ventilate with 100% oxygen.

Establish IV with Normal Saline and infuse at a rapid rate

Do not delay transport. Establish second or more IV's with Normal Saline enroute and continue to infuse IV's at a rapid rate until the BP is >90 systolic or until the patient's neck veins start to distend while in the supine position

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Caution:	Be aware of possible Hypothermia in patients with large blood loss, large open wounds, or elderly patients. Cover patient with blankets and turn-off the air conditioner in the ambulance patient compartment.

Reviewed 4/2004

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I-H ANAPHYLACTIC SHOCK/ALLERGIC RESPONSE

BP between 60-90 Systolic:

Administer O_2 at 10-15 liters by mask
Administer Epinephrine 1:1,000 0.3mg **subcutaneously**
Establish IV Normal Saline with 300cc rapid infusion
Administer Diphenhydramine (Benadryl) 50mg IV. If no IV available give 50mg via IM

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

BP < 60 Systolic:

Administer O_2 at 10-15 liters by mask
Establish large bore IV with Normal Saline with 300cc rapid infusion
Administer Epinephrine 1:10,000 IV at 0.1mg increments titrated up to 0.5mg
Administer Diphenhydramine 50mg IV
If no IV access available: 1. Administer Epinephrine 1:1,000 0.3mg IM or if intubated give Epinephrine 1:10,000 0.5mg via endotracheal tube 2. Administer Diphenhydramine 50mg IM

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-I ACUTE PULMONARY EDEMA

(Rales both lungs, with absence of fever)

Administer 100% oxygen by assisted mask ventilation

Administer Nitroglycerine 0.4mg (1/150 grain) aerosol spray or tablet if BP ≥ 100 systolic. May repeat x 1 after 5 minutes if BP ≥ 100 systolic

Establish IV @ TKO rate

Administer Furosemide (Lasix) 40mg IV push if BP ≥ 100 systolic

May Administer Morphine Sulfate 2mg IV push if BP ≥ 100 systolic

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

I-J SEVERE PULMONARY EDEMA

With dyspnea and cyanosis

Give 3rd Nitroglycerine 0.4mg aerosol (or tablet) if BP ≥ 100 systolic

Repeat Morphine Sulfate 2mg IV push if BP ≥ 100 systolic. 3-5 minutes later, if no symptom relief:

Give 4th Nitroglycerine 0.4mg aerosol (or tablet) if BP ≥ 100 systolic

Repeat Morphine Sulfate 2mg IV push if BP ≥ 100 systolic. 3-5 minutes later, if no relief of symptoms:

Administer 5th Nitroglycerine 0.4mg aerosol (or tablet) if BP ≥ 100 systolic

Administer Dopamine 2.5 – 20 microgram/kg per minute via automatic IV infusion pump if BP < 100 systolic

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-K BRONCHOSPASM

High flow oxygen 10-15 liters by mask or assisted bag-valve mask ventilation

1st inhalation updraft treatment with either: (a) Albuterol 2.5mg (if patient has a history of COPD add Atrovent 0.5mg to the updraft) or (b) Terbutaline 2mg

2nd inhalation updraft treatment with Albuterol 2.5mg

If patient with severe bronchospasm requires intubation and mechanical ventilation, and is very hard to ventilate because of severe bronchospasm, give 10cc of 1:10,000 Epinephrine down the endotracheal tube to reduce the bronchospasm

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-L CONTINUING BRONCHOSPASM

Continue 100% by mask or assisted mask ventilation

If still in bronchospasm, administer 3rd inhalation updraft with Albuterol 2.5mg

If < 40 years old, no history of COPD (emphysema or bronchitis), no cardiac history (cardiac medication, angina, or MI), severe dyspnea using intercostal muscles and cyanosis unrelieved with 10-15 liters O_2 by mask, administer Normal Saline IV 300cc rapid infusion

Endotracheal intubation if impending respiratory arrest

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-M DRUG OVERDOSE

Assess airway

Cardiac monitor

Start IV Normal Saline with 300cc rapid infusion

If patient with altered mental status or coma, use ALTERED MENTAL STATUS Standing Order I-N

Bring in bottles/containers

CONTACT MEDICOM PHYSICIAN BEFORE GIVING ANY IPECAC OR ACTIVATED CHARCOAL

Reviewed 4/2004

I-N ALTERED MENTAL STATUS

Check blood glucose

Draw blood sample for blood glucose test

Start IV Normal Saline TKO:
1. Administer Narcan at 0.4mg increments up to 2mg total
2. If blood glucose < 80mg% give 25Gm 50% Dextrose IV

IF CANNOT OBTAIN IV ACCESS:
1. Give Narcan 2mg IM or if intubated give via ET
2. If blood glucose < 80mg% give Glucagon 1mg IM

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-O TENSION PNEUMOTHORAX

Administer O_2 10-15 liters/min via mask or assisted BVM ventilation.

In the event that a patient is hypotensive (BP <90 systolic) with tracheal deviation and/or subcutaneous emphysema, and decreased breath sounds on one side, needle thoracostomy on that side should be performed.

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

NEEDLE THORACOSTOMY TECHNIQUE:

Insert 14g x $2_{1/4}$ inch needle (with or without catheter) in the second intercostal space just over the top of the third rib in the mid-clavicular line on the side with decreased breath sounds. An alternate site to consider for needle thoracostomy: Mid-axillary line 4^{th} or 5^{th} intercostal space. Remove needle when relieved and repeat procedure prn. For long transports > 20 minutes, leave catheter in place and attach 3-way Stopcock to relieve pressure as needed.

Reviewed 4/2004

I-P EMERGENCY DELIVERY

Administer O_2 10-15 liters/min via mask to mother, and start IV Normal Saline TKO

For difficult (Breech, Shoulder Dystocia, etc.) **COMMUNICATE STAT** with MEDICOM Base Station Physician (Oahu MICT's: Contact Kapiolani)

Don't allow baby's head to "pop" out

Feel for cord wrapped around neck and, if present, lift it gently over the head. If cord is too tight to lift over head, double clamp cord and cut it between the clamps

Suction baby's mouth, then nostrils, as soon as head appears

Mother:

(a) Apply firm rubbing pressure to low mid-abdomen
(b) If excessive hemorrhage or shock, follow HYPOVOLEMIC SHOCK Standing Order I-G

Baby:

(a) Follow NEWBORN RESUSCITATION Standing Order II-J

COMMUNICATE WITH MEDICOM BASE STATION PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-Q STATUS EPILEPTICUS
(Continuous Seizures)

Administer O_2 10-15 liters/min by mask or assisted BVM ventilation.

Establish IV Normal Saline at TKO rate

Do blood glucose test and follow ALTERED MENTAL STATUS Standing Order I-N as needed

If seizure has lasted more than 5 minutes since it began, administer *Valium 5mg IV slow push. If seizure continues more than 2 minutes following the first Valium 5mg dose IV, administer a second dose of Valium 5mg IV slow push

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

* Ativan (Lorazepam) may be substituted for Valium in the following manner: Administer Ativan in 1mg increments until seizure activity is controlled or a total of 10mg is given. May repeat, if necessary in 10-15 minutes

Reviewed 4/2004

I-R STATUS EPILEPTICUS
(Continuous Seizures)

If seizure continues more than 5 minutes after the 2nd Valium IV dose, administer additional Valium IV slow push titrate to control seizure activity up to a total of 20mg IV or 40mg given rectally.

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

I-S PARALYTIC-ASSISTED TRACHEAL INTUBATION

PREPARATION:

1. Hyperventilation/preoxygenate as appropriate
2. Assure suction is available and setup
3. Establish a large bore IV and secure
4. Place cardiac monitor and pulse oximeter on patient
5. Ready endotracheal equipment and supplies
6. Setup alternate airway adjuncts:
   a. Combitube
   b. Bag-Valve-Mask (if maxilla and mandible stable)
   c. Cricothyrotomy device
7. Restrain as appropriate

MEDICATION PROTOCOL:

- 3:00 min	Preoxygenate
- 2:00 min	Lidocaine (1.5 mg/kg) if head injury or CVA
- 1:30 min	If awake administer Versed 0.03mg/kg and may repeat same dosage in increments as needed to a maximum total dose of 0.1mg/kg

Versed "Quick-Look" Incremental Dose (0.03mg/kg)

40-50 kg:	1.5 mg
60-70 kg:	2 mg
80-90 kg:	2.5 mg
100-110 kg:	3 mg

- 1:00 min	Sellick maneuver
- 0:45 min	Succinylcholine IV (1.5 mg/kg) ***NOTE*:** If unable to establish IV, give double the IV dose intramuscularly
0:00 min	Intubate and assess ET tube placement
+0:30 min	Secure ET tube position and reassess tube placement
+1:00 min	Administer Atropine 0.01 mg/kg if Bradycardic and BP <100 systolic
+1:30 min	Administer Versed as above if not already given and may titrate remaining doses to total of 0.1mg/kg for continued patient sedation

Continued: PARALYTIC-ASSISTED TRACHEAL INTUBATION

If relaxation is inadequate after 1-2 minutes, repeat same dose of Succinylcholine and re-attempt ET intubation.

If unable to intubate the paralyzed patient, insert Combitube.

If still unable to secure the patient's airway, perform cricothyrotomy.

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

IMPORTANT:

The proper sequential administration of the PATI medications is critical to the success of this procedure and the care of the patient. All cases where there is a variation from this protocol will mandate a QI review by the EMS provider.

I-T SEVERE VOMITING

Administer O_2 at 2-4 liters/minute by nasal cannula

Cardiac Monitor

Establish IV Normal Saline at TKO rate

Administer *Compazine in 2.5mg increments slow IV push until vomiting is controlled or up to a total maximum dosage of 7.5mg

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

* Phenergan (Promethazine) may be substituted for Compazine in the following manner: Administer Phenergan in 12.5mg increments slow IV push until vomiting is controlled or up to a total maximum dosage of 25mg

Note: Treatment contraindicated in patients < 2 years of age, altered mental status, pregnancy and allergy/hypersensitivity to Compazine

Reviewed 4/2004

I-U CYANIDE EXPOSURE

For MICTs/EMTs or public safety responders determined to have a high likelihood of significant cyanide exposure.

Administer O_2 at 10-15 liters by non-rebreather mask or assisted BVM ventilation

Cardiac Monitor

Establish IV Normal Saline at TKO rate

If available: Administer Sodium Thiosulfate 12.5grams (50ml) IV

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Note: Nitrate therapy (such as amyl nitrite or sodium nitrite found in the CN Treatment Kits) is not helpful. Do not use them

Reviewed 4/2004

I-V NERVE AGENT EXPOSURE

In the event of a known or suspected exposure to nerve agents (Sx of pinpoint pupils, runny nose, shortness of breath) in EMS personnel or other public safety responders

If available: Immediately administer Auto-Injector Atropine 2mg

If available: Administer Auto-Injector 2-PAM Chloride 600mg

If signs of exposure persist or reoccur: Repeat above Auto-Injection treatment up to 3 doses of each

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

NERVE AGENT EXPOSURE WITH SEIZURES

In the above nerve agent patient with focal or generalized seizure

If available: Immediately administer Auto-Injector Valium 10mg

May repeat Valium 10mg x 2 for a total of 30mg for continued seizures

Support airway and ventilation as needed

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

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SECTION II

*PEDIATRIC STANDING ORDERS

INTRODUCTION

Respiratory failure is the most common cause of cardiac arrest in pediatric patients. Oxygen should be administered by high concentration partial rebreather oxygen mask at high flow rates to any serious patient. The adequacy of oxygenation and ventilation must be constantly re-evaluated. If endotracheal intubation is indicated, it should be performed prior to intravenous (IV) or intraosseous (IO) attempt. The Broselow tape should be used to pick the correct endotracheal tube size. Initial resuscitation medications can be administered via the endotracheal tube. Medications given by endotracheal tube which have a volume of less than 2cc should either be mixed with Normal Saline to increased the volume or followed by 1–2cc of Normal Saline. Do not delay transport attempting to initiate an IV or IO. If a line is established, it is desirable to administer medication directly into the circulation even if they have already been given via the endotracheal tube. Pediatric Standing Orders allow intraosseous line placement for pulseless ventricular fibrillation, ventricular tachycardia, asystole, and pulseless electrical activity. For all other conditions, an attempt to communicate with the Base Station Physician should be made first.

Critical pediatric patients may have unsuspected hypoglycemia. Check blood glucose early in resuscitation.

**** As defined in the Base Station Manual as a patient less than 13 years old***

Reviewed 4/2004

II-A CARDIOPULMONARY ARREST
(Absence of Pulse or Blood Pressure)

Initiate CPR and administer 100% O_2 by assisted mask ventilations as soon as possible. Maintain CPR and assisted ventilation throughout incident until the return of normal spontaneous pulse and/or respiration

Check cardiac monitor rhythm by attaching electrodes or by performing a "Quick Look" using defibrillation paddles

FOLLOW APPROPRIATE STANDING ORDERS

Reviewed 4/2004

II-1 PULSELESS VENTRICULAR TACHYCARDIA / FIBRILLATION

Defibrillate 2 joules/kg and check pulse and cardiac monitor. If in same rhythm:

Defibrillate 4 joules/kg and check pulse and cardiac monitor. If in same rhythm:

Defibrillate 4 joules/kg and check pulse and cardiac monitor. If in same rhythm:

- Continue CPR
- Establish IV Normal Saline followed with fluid bolus of 20cc/kg. If unable to start IV, perform intraosseous in one leg only
- Endotracheal Intubation

Epinephrine 1:10,000 0.01mg/kg IV or IO (or 1:1,000 0.1mg/kg via endotracheal tube)

Defibrillate (4 joules/kg) and check pulse and cardiac monitor. If in same rhythm:

Lidocaine 1mg/kg IV or via ET-tube

Defibrillate (4 joules/kg)

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-1-a CONTINUING PULSELESS VENTRICULAR TACHYCARDIA / FIBRILLATION

Repeat Epinephrine; increase dose to 0.1mg/kg IV, IO, or ET every 3-5 minutes. (Use Epinephrine 1:1,000 dilution if available)

Defibrillate 4 joules/kg and check pulse and cardiac monitor. If in same rhythm:

Repeat Lidocaine 1mg/kg IV, IO, or ET

Defibrillate 4 joules/kg and check pulse and cardiac monitor. If in same rhythm:

Defibrillate 4 joules/kg and check pulse and cardiac monitor. If in same rhythm:

Defibrillate 4 joules/kg and check pulse and cardiac monitor. If in same rhythm:

2nd IV bolus Normal Saline 20cc/kg

Defibrillate 4 joules/kg

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

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II-2 ASYSTOLE

Endotracheal Intubation
Establish IV with Normal Saline followed by a fluid bolus of 20cc/kg
If unable to start IV, perform intraosseous access in one leg only
Epinephrine 1:10,000 0.01mg/kg IV or IO (or 0.1mg/kg 1:1,000 via endotracheal tube). After initial dose administer Epinephrine 1:1,000 0.1mg/kg via IV, IO or ET repeat every 3-5 minutes
Repeat Epinephrine; increase dose to 0.1mg/kg IV, IO, or ET every 3-5 minutes. (Use Epinephrine 1:1,000 dilution if available)
Atropine 0.02mg/kg IV or endotracheal tube every 5 minutes (minimum dose 0.1mg, total maximum dose 1.0mg in small child, otherwise 2mg)
Repeat bolus Normal Saline 20cc/kg
Sodium bicarbonate 0.5mEq/kg diluted 1:1 with Normal Saline every 10 minutes

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-3 PULSELESS ELECTRICAL ACTIVITY

Endotracheal Intubation
Establish IV with Normal Saline followed with a fluid bolus of 20cc/kg
If unable to start IV, perform intraosseous access in one leg only
Epinephrine 1:10,000 0.01mg/kg IV or IO (or 0.1mg/kg 1:1,000 via endotracheal tube).
If no response: Administer 2nd Normal Saline bolus
Repeat Epinephrine 1:10,000 0.01mg/kg IV or IO (or 0.1mg/kg 1:1,000 via endotracheal tube).
Assess for possible pneumothorax
COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-3-a CONTINUING PULSELESS ELECTRICAL ACTIVITY

Repeat Epinephrine, increase dose to 0.1mg/kg IV, IO, or ET every 3-5 minutes, (Use Epinephrine 1:1,000 dilution if available)

Repeat Normal Saline IV bolus 20cc/kg

Administer Sodium Bicarbonate 0.5mEq/kg every 10 minutes (dilute 1:1 with Normal Saline)

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-4 DROWNING CARDIOPULMONARY ARREST

Because drowning cardiac arrest patients can be considerably acidotic, if there is no pulse after 2 doses of Epinephrine they should be given Sodium Bicarbonate.

Follow Standing Orders for Cardiopulmonary Arrest

Administer second dose Epinephrine 0.1mg/kg IV, IO or ET. Repeat every 3-5 minutes

Administer Sodium Bicarbonate 0.5mEq/kg IV, diluted 1:1 with Normal Saline

CONTINUE STANDING ORDERS

Caution: Be aware of possible Hypothermia. Cover the patient with blankets and turn off the air conditioner in the ambulance patient compartment.

Reviewed 4/2004

II-B PVC PATTERNS OR VENTRICULAR TACHYCARDIA WITH PERFUSION/PULSE

R on T, Bigeminy, Multiform, Coupled or More Than 5/minute

Lidocaine may **NOT** be given in 2nd or 3rd degree heart block without MEDICOM PHYSICIAN'S order.

Establish IV with Normal Saline at TKO rate

Administer Lidocaine 1mg/kg IV bolus

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-C BRADYCARDIA

≤ 60 beats/minute (≤ 80 beats/minutes if less than one (1) year of age) with poor perfusion

Assist ventilation as virtually all bradycardia in children is secondary to anoxia. If no response to 100% mask ventilations:

Endotracheal Intubation

If **poor perfusion**, initiate CPR

Establish IV with Normal Saline followed with a fluid bolus of 20cc/kg

Epinephrine 1:10,000 0.01mg/kg IV (or 0.1mg/kg 1:1,000 via endotracheal tube)

Atropine 0.02mg/kg IV push or via endotracheal tube (minimum dose 0.1mg, maximum single dose 0.5mg for child or 1mg for adolescent)

If not monitoring patient through pacemaker pads, apply pads only. Do not turn on external pacer until ordered by MEDICOM Physician

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-D IMPENDING RESPIRATORY FAILURE WITH A PULSE

Where Pulse Exists:

Provide rescue breathing, mask ventilation with 100% O_2

Perform Endotracheal Intubation. If unable to intubate, continue assisted mask ventilation with 100% O_2

Establish IV with Normal Saline at TKO rate

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-E HYPOVOLEMIC SHOCK

If the patient exhibits signs of shock considered to be secondary to hypovolemia:

Establish IV with Normal Saline. If unable to start IV, start IO. Infuse Normal Saline 20cc/kg as an initial fluid bolus

Administer 100% oxygen via mask or endotracheal tube

Do not delay transport, while enroute: 1) Infuse 2nd Normal Saline 20cc/kg fluid bolus 2) Establish 2nd IV.

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Caution: Be aware of possible hypothermia in patients with large blood loss or large open wounds. Cover patient with blankets and turn-off the air conditioner in the ambulance patient compartment.

Reviewed 4/2004

II-F SEVERE ALLERGIC REACTION / ANAPHYLACTIC SHOCK

Respiratory Distress Without Shock:

Administer O2 by mask
Give Epinephrine 1:1,000 0.01mg/kg **Sub-Q** (maximum dose 0.3mg)
Start IV with Normal Saline, TKO rate
Give Benadryl 2mg/kg up to 50mg IV slowly
If signs & symptoms continue, repeat Epinephrine 1:1,000 0.01mg/kg **Sub-Q** (maximum dose 0.3mg)
If patient is wheezing, refer to BRONCHOSPASM Standing Order II-G

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Anaphylactic Shock:

Administer O2 by mask
Give Epinephrine 1:1,000 0.01mg/kg **IM** (maximum dose 0.3mg)
Start IV with Normal Saline followed with a fluid bolus of 20cc/kg
Give Benadryl 2mg/kg up to 50mg IV slowly
If patient is wheezing, refer to BRONCHOSPASM Standing Order II-G
If signs & symptoms continue: 1) Repeat 2nd Epinephrine 1:1,000 0.01mg/kg **IM** (maximum dose 0.3mg) or communicate for Epinephrine IV 2) Repeat Normal Saline IV bolus 20 cc/kg

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-G BRONCHOSPASM

Respiratory distress with wheezing not involving foreign body

Administer O_2 at 10-15 liters by high concentration mask

If in severe respiratory distress, administer 0.01 mg/kg Epinephrine 1:1,000 Sub-Q (up to 0.3mg maximum)

1st inhalation updraft treatment with Albuterol 2.5mg via nebulizer. If initially in severe bronchospasm or impending respiratory arrest, increase updraft treatment to Albuterol 5mg plus Atrovent 0.5mg via nebulizer

2nd inhalation updraft treatment with Albuterol 2.5mg plus Atrovent 0.5mg (if Atrovent not already given) via nebulizer

If patient with severe bronchospasm requires intubation and is very hard to ventilate because of severe bronchospasm, administer Epinephrine 1:10,000 0.01mg/kg down the endotracheal tube to reduce the bronchospasm

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-H DRUG OVERDOSE

Assess airway

Apply Cardiac monitor

Start IV Normal Saline at TKO rate

In patients with no gag reflex, transport in left lateral decubitus position and be prepared to suction or intubate the airway if necessary. Use IMPENDING RESPIRATORY FAILURE WITH PULSE Standing Order II-D

Bring in bottles / containers

CONTACT THE MEDICOM PHYSICIAN BEFORE GIVING ANY IPECAC OR ACTIVATED CHARCOAL

Reviewed 4/2004

II-I HYPOGLYCEMIA / INSULIN REACTION

Check Dexstix

Draw blood sample for blood glucose test

Start IV with Normal Saline at TKO

If Glucose reading ≤ 80mg% (or ≤ 40mg% in newborn), administer Glucose 0.5 grams/kg (or 1cc/kg of 50% Dextrose Solution) IV. For infants and children <30kg, mix with equal volume of Normal Saline.

IF CANNOT OBTAIN IV ACCESS and if Dexstix ≤ 80mg% (or ≤ 40mg% in newborn), give Glucagon 1mg IM (0.5mg IM if less than one year of age)

Recheck blood glucose

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-J NEWBORN RESUSCITATION

(If heart rate is less than 100/min, with poor respirations and noted to be cyanotic and limp)

Mask positive pressure 20 breaths in 30 seconds with 100% O_2

If heart rate < 80, intubate with 3.0 ET tube (2.5 ET if premature), and ventilate 40-60 breaths/minute

If heart rate is still < 80, begin cardiac compressions at rate of 120/minute, and give:

Epinephrine 1:10,000 0.5cc (0.05mg) via ET (diluted with 1.0cc Normal Saline)

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

Reviewed 4/2004

II-K STATUS EPILEPTICUS
(Continuous Seizures)

Administer O_2 by mask or assisted BVM ventilation

Do blood glucose test and follow HYPOGLYCEMIA / INSULIN REACTION Standing Order II-I

Establish IV with Normal Saline at TKO rate

If seizure has lasted more than 5 minutes since it began and is generalized, administer *Valium 0.1mg/kg slow IV push up to 2mg per dose

If IV not quickly established, administer Valium 0.5mg/kg rectally up to 20mg maximum

Monitor respiratory status and support as needed (avoid overzealous intubation if adequate oxygenation is present)

COMMUNICATE WITH MEDICOM PHYSICIAN FOR FURTHER ORDERS

* Ativan (Lorazepam) IV may be substituted for Valium in the following manner: Administer Ativan 0.05mg/kg slow IV push in 0.5mg increments until seizure activity is controlled

Reviewed 4/2004

LINDA LINGLE
GOVERNOR OF HAWAII

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In reply, please refer to :

EMS 04-

June 24, 2004

TO: EMS Field Personnel
EMS Providers
EMS Medical Directors
EMS Training Centers
Hospital Emergency Department Directors & Coordinators

FROM: Donald C. Fancher, M.D.
State EMS Medical Director

THROUGH: Donna Maiava, Chief
Emergency Medical Services & Injury Prevention System Branch

SUBJECT: 2004 Standing Orders

It has been brought to my attention that the 2004 Standing Orders for the treatment of Pulseless Ventricular Tachycardia/Fibrillation on page 5, Section I-1, the 9th paragraph is in error.

In order to eliminate any confusion or misunderstanding I have decided that this particular paragraph (page 5, Section I-1, 9th paragraph) will be eliminate upon receipt of this memo. Further definitive treatment for patients in this condition shall be through the direction of the communicating base station physician.

If you have any questions regarding this directive, please contact Donna Maiava or Clay Chan at 733-9210.